

**Institute of Energy Technology – Professorship of Renewable Energy Carriers*****Invitation to a Seminar***

**Date:** Friday, May 16, 2014  
**Time:** 16:00-17:00  
**Place:** Maschinenlaboratorium ETH Zürich, ML-J25/26

**Speaker:** **Dr. Philip van Eyk**  
Australian Solar Institute Postdoctoral Fellow  
School of Chemical Engineering,  
The University of Adelaide, Australia

**Title:** **Gasification of low-grade carbonaceous feedstocks in autothermal and solar-thermal reactors**

**Abstract –**

This seminar will introduce the recent research activities of the South Australian Coal Research Laboratory (SACRL), part of the School of Chemical Engineering and the Centre for Energy Technology at the University of Adelaide. The research of SACRL focuses on the utilisation and performance of solid fuels, including brown coal, lignite, biomass and solid waste fuels, with a particular emphasis on South Australian and Victorian low-rank coals. Over the past few years SACRL has worked closely with the industrial partner Strike Energy to demonstrate the gasification technology for their proposed Coal-to-Liquids project based on the Kingston coal deposit in South Australia. This project has demonstrated that Kingston coal can be successfully gasified using circulating fluidised-bed technology and identified mitigation strategies which can be employed to alleviate defluidisation and agglomeration problems associated with the high sodium content of this coal. Most recently, work within the group has focused on solar gasification technologies for these coals and biomass fuels with a particular emphasis on mathematical modelling and the determination of techno-economic feasibility of various solar gasifier concepts.

**Biosketch –**

Dr Philip van Eyk is an Australian Solar Institute Postdoctoral Fellow in the School of Chemical Engineering of the University of Adelaide. He graduated with a PhD in Chemical Engineering from the University of Adelaide in 2011. This work involved developing new laser diagnostic techniques and performing mathematical modelling to provide a better understanding of the release of sodium during the combustion of solid fuels. He has also gained several years experience as a Research Associate designing and operating large, laboratory-scale gasifiers from 2009-2011 for SACRL, with the aim of overcoming ash related operational problems during the gasification of high sodium South Australian brown coals in fluidised beds. Most recently, in 2012 he was awarded a postdoctoral fellowship by the Australian Solar Institute (ASI). The three-year fellowship is to investigate using solar energy combined with gasification to produce lower-carbon, high-value liquid transport fuels from low grade carbonaceous feedstocks, including brown coal and biomass.

